

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>10020467W001</b>	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/JP2005/011000</b>	International filing date (day/month/year) <b>09/06/2005</b>	(Earliest) Priority Date (day/month/year) <b>11/06/2004</b>
Applicant <b>CANON KABUSHIKI KAISHA</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 05 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**POLYHYDROXYALKANOIC ACID HAVING ESTER, CARBOXYL OR SULFONIC ACID GROUP AND PRODUCING METHOD THEREFOR**

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. \_\_\_\_\_

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/JP2005/011000

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C08G63/08 C08G63/688 C08G63/685 C08G63/91

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C08G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)  
EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SAULNIER B., PONSART S., COUDANE J., GARREAU H. & VERT M.: "Lactic acid-based functionalized polymers via copolymerization and chemical modification" MACROMOLECULAR BIOSCIENCE, vol. 4, no. 3, 2004, pages 232-237, XP002339168 cited in the application pages 235-236; figures 3,4	3-5,7
A	US 5 610 241 A (LEE ET AL) 11 March 1997 (1997-03-11) column 8, line 1 - line 24  -/-	7,8

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

4 August 2005

Date of mailing of the international search report

16/08/2005

Name and mailing address of the ISA  
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Masson, P

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/JP2005/011000

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 265 247 A (LENZ ET AL) 5 May 1981 (1981-05-05) cited in the application column 1, line 51 - column 3, line 2; claims	1-8
A	FR 2 765 228 A (CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS) 31 December 1998 (1998-12-31) page 2, line 17 - page 3, line 5; claims page 3, line 30 - page 4, line 14	1-8
A	HIRONOBU FUKUZAKI ET AL: "SYNTHESIS OF BIODEGRADABLE COPOLY(L-LACTIC ACID/AROMATIC HYDROXYACIDS) WITH RELATIVELY LOW MOLECULAR WEIGHT" EUROPEAN POLYMER JOURNAL, PERGAMON PRESS LTD. OXFORD, GB, vol. 26, no. 12, January 1990 (1990-01), pages 1273-1277, XP000205044 ISSN: 0014-3057 the whole document	1-8
A	WHITESELL J K ET AL: "Homochiral and Heterochiral Polyesters: Polymers Derived from Mandelic Acid" CHEMISTRY OF MATERIALS, AMERICAN CHEMICAL SOCIETY, WASHINGTON, US, vol. 2, 1990, pages 248-254, XP002167703 ISSN: 0897-4756 the whole document	1-8
A	CAMMAS S., BÉAR M-M, MOINE L., ESCALUP R., PONCHEL G., KATAKOA K., GUÉRIN P.: "Polymers of malic acid and 3-alkylmalic acid as synthetic PHAs in the design of biocompatible hydrolyzable devices" INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, vol. 25, 1999, pages 273-282, XP002339169 cited in the application the whole document	5
A	PONSART S., COUDANE J., VERT M.: "A novel route to poly( $\epsilon$ -caprolactone)-based copolymers via anionic derivatization" BIOMACROMOLECULES, vol. 1, 2000, pages 275-281, XP002339170 tables 1,3	7
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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/JP2005/011000

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	YIN M. & BAKER G.L.: "Preparation and Characterization of substituted polylactides" MACROMOLECULES, vol. 32, no. 23, 1999, pages 7711-7717, XP002339171 scheme 1	1-8
A	YAMAKOA T., HOTTA Y., KOBAYASHI K., KIMURA Y.: "Synthesis and properties of malic acid-containing functional polymers" INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, vol. 25, 1999, pages 265-271, XP002339172 cited in the application the whole document	1-8

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/JP2005/011000

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5610241	A	11-03-1997	EP	0898590 A1	03-03-1999
			WO	9742249 A1	13-11-1997
US 4265247	A	05-05-1981	US	4320753 A	23-03-1982
FR 2765228	A	31-12-1998	FR	2765228 A1	31-12-1998
			CA	2295952 A1	07-01-1999
			EP	0991692 A1	12-04-2000
			WO	9900441 A1	07-01-1999
			JP	2002511113 T	09-04-2002
			US	6156429 A	05-12-2000